

REMARKS

Summary of the Office Action

Claims 1, 4-6, 8, 9, 12, 14-16 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eguchi (US, 5,514,426) in view of Hasegawa et al. (US, 6,614,4910), Kanbe et al. (US, 4,709,994), and Takatori (US, 6,351,301).

Summary of the Response to the Office Action

Claim 9 is amended, claims 8, and 14-19 are cancelled without prejudice or disclaimer, and new claims 21-23 are added. Accordingly, claims 1, 4-6, 9, 12, and 21-23 are presently pending for consideration.

All Claims Define Allowable Subject Matter

Claims 1, 4-6, 8, 9, 12, 14-16 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eguchi in view of Hasegawa et al., Kanbe et al., and Takatori. Applicants respectfully traverse these rejections for at least the following reasons.

With respect to independent claims 1 and 9, as previously presented, Applicants respectfully submit that Eguchi, Hasegawa et al., Kanbe et al., and Takatori whether taken singly or combined, fails to teach or suggest at least the features of “the liquid crystal is a ferroelectric liquid crystal of Half V-Switching mode.”

On page 5 of the Action, the Office explicitly admits that Eguchi, Hasegawa et al., and Kanbe et al. do not teach or suggest the use of a “Half V-switching mode.” However, the Office on page 6 alleges that Takatori teaches the limitation such as “the ferroelectric liquid crystal employs a monostable FLC having a Half V-shaped switching mode” (Takatori, col. 3, lines 30-

47). "Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the liquid crystal display of Eguchi, Hasegawa et al., and Kanbe et al. with the teachings of the ferroelectric liquid crystal having a Half V-switching mode maintaining monostable state by applying DC voltage as taught by Takatori, since the skilled in the art would be motivated for attaining the continuous grayscale display. Applicants respectfully disagree.

Applicants respectfully submit that the liquid crystal display device of Eguchi appear to implement exclusively the non-Half V-switching mode ferroelectric liquid crystal. As taught at col. 10, lines 17-43, Eguchi specifically teaches the use of "a ferroelectric liquid crystal having a sufficiently large spontaneous polarization of, e.g. at least 10nC/cm²." In other words, the ferroelectric liquid crystal of Eguchi requires a large amount of voltage to drive a liquid crystal cell. On the other hand, the ferroelectric liquid crystal having a Half V-switching mode requires a low driving voltage because less electrode area is used and the capacitance is relatively small compared to the non-Half V-switching mode ferroelectric liquid crystal (for example, see original specification at paragraph [0007]). Accordingly, since Eguchi is intended to use the ferroelectric liquid crystal that requires the large amount of driving voltage, it would be contradictory to replace the non-Half V-switching mode ferroelectric liquid crystal of Eguchi with the "ferroelectric liquid crystal having the Half V-switching mode." Thus, Applicants respectfully submit that there would be no motivation for one of ordinary skill in the art to modify the device of Eguchi to have the Half V-switching mode of Takatori. In fact, the teachings of the prior art taken as a whole would teach against such a combination of Eguchi and

Takatori. Therefore, the rejection of independent claims 1 and 9 are improper and should be withdrawn.

In addition, Applicants respectfully submit that Hasegawa et al. and Kanbe et al., whether taken singly or combined, fails to teach the liquid crystal display device having the “ferroelectric liquid crystal of Half V-switching mode.” Furthermore, Applicants respectfully submit that Hasegawa et al. fails to cure the deficiencies of Eguchi. Moreover, Kanbe et al. fails to cure the deficiencies of Hasegawa et al., thus, Kanbe et al. and Hasegawa et al. in combination do not cure the deficiencies of Eguchi. Moreover, Takatori also fails to cure the deficiencies of Eguchi, Hasegawa et al., and Kanbe et al. Accordingly, Applicants respectfully assert that none of the cited prior art, whether taken singly or combined, teach or suggest at least the features of independent claims 1 and 9. Thus, in light of the arguments presented above, Applicants respectfully request the rejection of claims under 35 U.S.C. §103(a) be withdrawn. Moreover, Applicants assert that dependent claims 4-6, 8, 12, and 14 are allowable at least because of their dependencies from the respective one of the allowable independent claims 1 and 9.

New claims 21-23

New claims 21-23 are added. Applicants respectfully submit that new claims 21-23 further define the subject matter of the present invention. Thus, Applicants respectfully request consideration of newly added claims 21-23.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

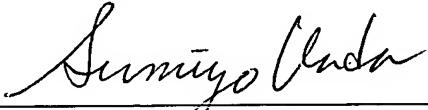
MORGAN, LEWIS & BOCKIUS LLP

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Customer No.: 009629

MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 2000
TEL: 202-739-7000
FAX: 202-739-3001

By: _____



Sumiyo Onda
Reg. No. L 0289